core muscles, which is suggested by literatures to be effective in treating chronic LBP. This study aimed to evaluate the effectiveness of clinical Pilates exercise programme in patients with chronic LBP.
Methods: Subjects aged 18—55 years and diagnosed with LBP for more than 3 months were recruited. Clinical Pilates exercise group (CPEG) was given one-to-one supervised Pilates exercises, while traditional back exercises were taught to the traditional exercise group (TEG). Both groups received 30-minute exercise training, twice per week for 8 weeks. Outcome measures included Numerical Pain Rating Scale (NPRS), Sit and Reach test, Hong Kong Chinese version of the Roland Morris Disability Questionnaire (RMDQ-HK), Chinese version of the 11-item Tampa Scale of Kinesiophobia (ChTSK-11) and the Chinese (HK) SF-12 Health Survey-Version 2 (SF-12v2).
Results: Forty-eight patients (male = 11, female = 37, mean age = 46 years) were recruited. The baseline characteristics of the groups were comparable. There was significant within-group difference in NPRS in both groups, while between-group comparison showed greater pain reduction in CPEG than TEG (63% vs. 33%; $p<0.05$). Subjects in CPEG demonstrated a greater improvement in ChTSK-11 as compared to TEG (23% vs. 15%; $p<0.05$). Similar findings were detected with significant improvement in flexibility for within-group comparison, while between-group comparison demonstrated greater improvement in CPEG (57% vs. 27%; $p<0.05$).
Conclusion: Clinical Pilates and traditional back exercises are effective in managing chronic LBP, with our results favouring clinical Pilates.

http://dx.doi.org/10.1016/j.hkpj.2015.09.028

What makes the difference: the patient journey of a 4-year old boy with type I spinal muscular dystrophy

T.M.K. Chen, MPhil[a], M.K. Au, MSc[a], S.M.L. Yee, MSSc[a], R.M.W. Chau, DHSc[a], P.M.Y. Lau, DHSc[b]
[a]Physiotherapy Department, Kowloon Hospital, Hong Kong
[b]Physiotherapy Department, Kowloon Central Cluster, Hong Kong

Background and purpose: Spinal muscular atrophy (SMA) is an autosomal recessive neuromuscular disease characterized by degeneration of spinal motor neurons, resulting in progressive weakness. In the most severe form, Type 1, the typical natural history is respiratory failure and death before age of 2. With advances in medical technology and standard of care, both survival time and quality of life move forward.
Methods: This is a case report of a 4-year old boy with Type 1 SMA. The clinical record was reviewed and related information on four care areas—diagnosis, pulmonary, gastrointestinal/nutrition, orthopaedic/rehabilitation—was extracted.
Results: The boy was noted to have hypotonia before the age of 3 months. Diagnosis of Type 1 SMA was confirmed at 19 months by muscle biopsy. Physiotherapy started at 8 months, including gentle strengthening and stretching exercises, chest physiotherapy, hydrotherapy and 24-hour positioning programme. Home programme was implemented for continuity of care. Wide spectrum of appliances and equipment were prescribed as indicated. The family reported significant decrease in time for chest physiotherapy (50%) after the use of nocturnal BiPAP and CoughAssist (started at 20 and 25 months, respectively). The score of Pediatric Quality of Life Inventory Neuromuscular Module before and after increased from 30 to 34.
Conclusion: Physiotherapist plays a significant role in the family-centred multispecialty care of SMA. The better quality of life score indicates that we do not just add years to life but also life to years. The authors hope that the sharing of this boy's patient journey will serve as local care reference for other affected children.

http://dx.doi.org/10.1016/j.hkpj.2015.09.029

Grip strength can predict choice of walking aids in the elderly

S.C. Yip, BSc[a], H.B. Leung, FHKCOS[b]
[a]Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hong Kong
[b]Q9 Orthopaedic and Spine Centre, Central, Hong Kong

Background and purpose: Good grip strength is a prerequisite to hand function. It was found not only to correlate to the global strength of upper limb muscles but also correlate to lower limb muscle strength. This study aimed to identify if grip strength could predict the walking ability of the elderly.
Methods: 95 patients from rehabilitation wards and outpatient clinic were included. Patients with upper limb pathology, bed-/chair-bound or non-communicable, and with a history of hemiplegia were excluded. Subjects performed three full-strength grips with both hands, measured by a digital dynamometer. Ordinal logistic regression model was performed to investigate if the selection of walking aids was dependent on the maximal grip strength, Abbreviated Mental Test (AMT), age and sex. One-way ANOVA was performed to compare the means of maximal grip strength among walking aid groups.
Results: All 95 patients consented and completed the test. The selection of walking aids was found to be dependent on the maximal grip strength of the dominant hand (odds ratio = 1.07, 95% confidence interval 1.01—1.14, $p=0.02$) but not age, sex, and AMT in the regression model. In ANOVA, patients walking unaided, stick, quadripod, and frame/crutches were found to have significant difference in grip strength (means = 22.5 kg, 18.0 kg, 13.2 kg and 11.1 kg respectively; $F=10.30$, $p<0.001$). Post-hoc comparisons indicated significant between-group differences ($p<0.05$) except for similar strengths between quadripod and frame groups.
Conclusion: Selection of walking aids is related to grip strength. Patients with need for higher level of aids had progressively weaker grip strength.

http://dx.doi.org/10.1016/j.hkpj.2015.09.030

Survey on team sports-related injury and management in young Hong Kong athletes

D.D. Daswani, BSc, W.Y.J. Lee, MSc, S.H.P. Yung, MBChB
Department of Orthopaedics & Traumatology, The Chinese University of Hong Kong, Hong Kong

Background and purpose: Sports-related injuries are common in young athletes. Little is known about the prevalence, nature, severity and management of such injuries amongst the Hong Kong youth. The objective is to estimate the prevalence, identify the nature and anatomical location of common injuries and current injury management strategies.
Methods: This was a cross-sectional study that recruited adolescents aged 12—18 years, who represent their schools in basketball, soccer, volleyball and handball, from 20 randomly selected secondary schools. The participants completed a survey about their sports-related injuries and injury management in the last 1 year.
Results: The response rate was 79% with 779 surveys completed. 523 of respondents sustained at least one injury over the last year. Sprains (32.6%), strains (27.8%) and contusions (21%) were the most common injuries. The ankle (26%) was the most common site of injury, followed by the knee (16.6%) and wrist/fingers (13.4%). Logistic regression revealed injury prevalence was significantly ($p=0.001$) associated with increasing age and older athletes were 1.175 times more likely to sustain an injury when compared to younger athletes. Less than 10% of those injured sought medical treatment or physiotherapy.
Conclusion: Sports-related injuries is common in young team sports players and the epidemiological data on injury type and location generated from this study can form the basis for investigation of risk factors. Given the high prevalence of injury, resources should be put forward to implement injury prevention programmes and ensure proper injury management. Moreover, enhancing public awareness and educating coaches, parents and athletes on injury prevention and management are necessary.

http://dx.doi.org/10.1016/j.hkpj.2015.09.031

Laser acupuncture attenuates paraesthesia and allodynia induced by chemotherapy in gastrointestinal cancer patients

C.-C. Yang, MD, MS[a], Y.-L. Hsieh, PhD[b]
[a]Department of Physical Medicine and Rehabilitation, Cheng Ching General Hospital, Taichung, Taiwan
[b]Department of Physical Therapy, Graduate Institute of Rehabilitation Science, China Medical University, Taichung, Taiwan

Background and purpose: Gastrointestinal cancer has been the most common cancer in Taiwan especially for colorectal cancer during the past decade. Oxaliplatin is clinically widespread used as the first line chemotherapy for patients

with gastrointestinal cancer. Unfortunately, oxaliplatin-induced peripheral neuropathy (OIPN) occurs in about 90% of patients suffering acute neuropathy with distal paraesthesia and cold-triggered dysaesthesia and 15—20% leading chronic neuropathy with painful sensations. However, the nonpharmacological neuroprotective strategies on management of OIPN are few. The purpose of this study is to investigate the effects of laser acupuncture on alleviation of OIPN-induced sensory impairments in gastrointestinal cancer patients.
Methods: Patients (n=13) with gastrointestinal cancer received oxaliplatin administration were routinely referred from the Department of Oncology and Cancer Center. All of the subjects suffered from OIPN. Low-level laser stimulation (50 mW, 60 J) at acupoints of Neiguan (PC6), Daling (PC7), Laogong (PC8), Chongchung (P9), Shao shang (LU11), Sanyinjiao (SP6), Taixi (KI3), Kunlun (BL60), Yongquan (KI1), Rangu (KI2) were conducted for 20 minutes/point for 12 times. Measurements on von Frey test, Pain Quality Assessment Scale (PQAS), Chemotherapy-Induced Peripheral Neuropathy Scale (CINQ), Oxaliplatin-Specific Neurotoxicity Scale (OSNS) were performed before and after 12 sessions of treatment.
Results: Significant improvements ($p<0.05$) were found on cold allodynia, mechanical sensory threshold, scores of PQAS and CINQ after a 12-session programme of laser acupuncture in gastrointestinal cancer patients with OIPN.
Conclusion: Laser acupuncture improves sensory impairments and neurotoxicity severity induced by OIPN in cancer patients and may also offer an adjuvant therapy on reduction of neurological adverse effects of chemotherapy.

http://dx.doi.org/10.1016/j.hkpj.2015.09.032

Analgesic effects of low-level laser therapy in a rat model of chronic neuropathy induced by long-term administration of oxaliplatin

C.-C. Yang, MD, MS[a], Y.-L. Hsieh, PhD[b]
[a]Department of Physical Medicine and Rehabilitation, Cheng Ching General Hospital, Taichung, Taiwan
[b]Department of Physical Therapy, Graduate Institute of Rehabilitation Science, China Medical University, Taichung, Taiwan

Background and purpose: Long-term infusion of oxaliplatin, which is a platinum-based chemotherapeutic agent widely used to treat metastatic colorectal cancer, induces specific sensory neurotoxicity signs that are triggered or aggravated when exposed to cold or mechanical stimuli. Low-level laser therapy (LLLT) is usually used on the managements of pain, allodynia, and nerve repair in clinical trials. However, there is few data to conduct the effects of LLLT on managements of oxaliplatin-induced peripheral neuropathy (OIPN). The anti-allodynic effects of LLLT on OIPN in rats were investigated in this study.
Methods: Adult male SD rats (n=22, 250—300 g) were divided randomly into three groups based on the treatments: vehicle (n=6), oxaliplatin injection only (n=8), oxaliplatin combined with LLLT treatment (n=8). Oxaliplatin was intraperitoneally (i.p.) injected at 4 mg/kg on two alternate days for a total of 12 doses. The vehicle control group received the same volume of a 5% glucose solution through the same injection route. After completion of 12-dosage oxaliplatin, LLLT (4.5 J/cm^2 of energy density) were applied to the four limbs for 12 days consecutively. Sensory assessment including acetone tests, cold-water immersion, von Frey filament test, and transient receptor potential (TRP) channel-evoked nocifensive behaviours were recorded before and after oxaliplatin administration and LLLT treatments.
Results: LLLT significantly increased the mechanical withdrawal threshold, reaction time for acetone stimulation and cold-water immersion and decreased capsaicin- and menthol-evoked nocifensive behaviour ($p<0.05$).
Conclusion: For chronic peripheral neuropathy induced by repetitive administration of oxaliplatin, LLLT may improve the cold and mechanical allodynia.

http://dx.doi.org/10.1016/j.hkpj.2015.09.033

Cognitive-motor interference during gait in healthy adults: What matters?

S.W.Y. Ng, BSc, J.P.T. Mui, BA, D.Y.K. Chong, DScPT, M.Y.C. Pang, PhD
Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hong Kong

Background and purpose: Cognitive-motor interference (CMI) defines as the deterioration of motor or cognitive (or both) performance under dual-task as compared to single-task conditions. CMI occurs during walking but the pattern of interference is unclear. In addition, the motor and cognitive task difficulty may have different effects on CMI. The purpose of this study is to investigate the pattern of CMI and to explore the effects of cognitive and motor task difficulty on CMI in healthy adults.
Methods: Community healthy adults were recruited using convenience sampling. Subjects performed single motor tasks (1-minute walk with and without obstacles), single cognitive tasks (Auditory Stroop Test and Clock Task) and motor-cognitive dual tasks with single tasks performed prior to dual tasks. The tasks represented different difficulty levels and measured walking distance, reaction time and response accuracy. Repeated measures ANOVA (3×2) were used to compare performances between single- and dual-task conditions.
Results: Twenty subjects (14 females, 6 males) with a mean age of 57.2 years participated. There was a significant motor-cognitive interaction effect with distance walked ($p<0.05$). In single-task condition, the distance walked in 1-minute walk was 3.57 m less than that in 1-minute obstacle walk ($p<0.001$). Adding the Stroop or Clock tasks led to a disproportionate reduction in distance in 1-minute walk (by 5.48 m and 7.83 m respectively, $p<0.05$). Accuracy rate in single-task condition significantly decreased by 16.7% ($p<0.05$) in Stoop Tests compared to Clock Tasks but no significant interaction effect was identified in dual-task conditions. Reaction time in single-task condition significantly increased in Clock Tasks compared to Stroop Test by 0.796 s ($p<0.001$). Adding 1-minute walk and 1-minute obstacle walk led to a reduction in reaction time by 0.276 s and 0.214 s respectively ($p<0.005$).
Conclusion: Healthy adults appear to prioritize reaction time and accuracy over motor performance in cognitive-motor dual-task conditions irrespective of cognitive task complexity. For dual-cognitive situations, they appear to aim for correct rather than fast responses.

http://dx.doi.org/10.1016/j.hkpj.2015.09.034

Importance of back core exercises and its role in reducing back pain in office work

C.H.E. Wong, MSocSc, Y.M.B. Tsang, BSc
Physiotherapy Department, Matilda International Hospital, Hong Kong

Background and Purpose: Posture awareness and exercises habits are the key factors for our clients to prevent injuries during daily functions. In this study, we explored the importance of back core exercises and its role in reducing back pain in daily office work.
Methods: One group pre-test and post-test method was used. Cases (mean age, 38 years; female-to-male ratio, 18:7). They worked in banks and were display screen equipment (DSE) users. All cases had experienced episodes of low back pain within the past 6 months. The programme was divided into four main sessions: a consultation and assessment session, two Pilates Classes consisting of back core exercise training, and a follow-up evaluation and consultation session. Clients were evaluated at baseline (first session) and again after one month (follow-up session). Evaluations included objective assessment of the mobility of the cervical and lumbar spine pain, and self-report of postural awareness and physical fitness, level of pain and frequency of exercise.
Results: A total of 50 participants were enrolled into this programme. There was increased mobility of the neck in rotation and side flexion movements in 67% of the patients with neck pain. 71% of the patients with back pain had increased mobility of the lumbar spine into flexion, extension and side flexion after six week programme ($p<0.03$). For the improvement of the postural awareness and physical fitness, 30% of the participants reported improving 50% or more, 42% reported improving over 30% or more. 32% complained of neck pain, 28% complained of back pain and 50% had both neck and back pain. 68% of the participants reported improved on back pain. 80% of the clients followed exercise plan at all and increased exercise habits in weekly.
Conclusion: The programme was to provide health awareness and physical fitness in our clients. Also, with the change in exercise habits by means of our specific exercise programme, clients can prevent potential injury in their working environment.

http://dx.doi.org/10.1016/j.hkpj.2015.09.035